



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

(23)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/889,318	07/08/97	GOUS J	11415/18901

SIDLEY & AUSTIN
4500 RENAISSANCE TOWER
1201 ELM STREET
DALLAS TX 75270-2197

LM02/0722

EXAMINER
GESESSE, T

ART UNIT	PAPER NUMBER
2746	4

DATE MAILED: 07/22/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/889,318

Applicant(s)

Jeffry J. Goos

Examiner

Tilahun, Gesesse

Group Art Unit

2746



☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1035 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-17 is/are pending in the application.
Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-17 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

Art Unit: 2746

DETAILED ACTION

Claim Objection

1. Claims 5,7,11 and 16 are objected to because of the following informalities: the claims include the indefinite term “substantially” which doesn’t further limit the claim subject matter. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2746

3. Claims 1-3,5-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Busking (US PAT.5,659,253) in view of Pakonen (US PAT. 5,392,464 hereinafter Pakonen).

Regarding claim 1, Busking discloses a temperature compensated detector (50) (see fig.2). Busking fails to disclose a first conductor carrying signals to be detected and a second conductor carrying signal electromagnetically induced therein from said first conductor . However, Pakonen discloses a first conductor carrying signals to be detected and a second conductor carrying signal electromagnetically induced therein from said first conductor (col.3 line 20-32). Therefore, it would have been obvious to anyone of ordinary skill in the art at the time of invention was made to modify Busking in designing two conductors in the directional coupler, as per the teaching of Pakonen, in order the temperature sensing circuit detects an internal temperature of the casing and provides a power reduction signal upon detecting that the internal temperature has exceeded a predetermined temperature. Busking discloses a detector (diode 2 &3) including a rectifier for providing an output signal representative of the signal carried by the first conductor (see fig.3 and col.2 line 27-42). Busking discloses a temperature compensation circuit providing a compensating bias signal to the detector (diode 2 &3),the compensating circuit being connected in a manner to provide compensating bias signals to the detector so as to prevent loading thereof (col.2 line 44-52).

Regarding claim 2, Busking fails explicitly to disclose the first and second conductor in the directional coupler. However, Pakonen discloses the first and second conductors within the directional coupler (see fig.1 #10). Therefore, it would have been obvious to anyone of ordinary

Art Unit: 2746

skill in the art at the time of invention was made to modify Busking in showing explicitly in the design of directional coupler the first and second conductors, as per the teaching of Pakonen, in order to detect the electromagnetic RF signal that is couple in the directional coupler.

Regarding claim 3, Busking discloses the detector is coupled to a terminal of the directional coupler for sensing a forward signal carried by the first conductor(22), and the temperature compensation circuit is connected to a different terminal of the directional coupler(26) (see fig.2 and col. 2 line 24-30). However, it would have been obvious to name a forward signal to the terminal connecting the detector circuit for a person of ordinary skill in the art at the time of the invention was made.

Regarding claim 5, Busking fails to disclose an equal magnitude bias current to flow through each diode. However, Pakonen discloses the circuit each include a rectifier diode(16), and including corresponding circuitry for providing substantially an equal magnitude bias current to flow through each diode (col.3 line 49-60). Then it would have been obvious to anyone of ordinary skill in the art at time of invention was made to modify Busking in managing to flow equal current in magnitude by increasing or decreasing the impedance of diode(24) to have proportional current flow in the circuitry, as per the teaching of Pakonen, in order to manage the output level control signal with the temperature sensing circuit.

Regarding claim 6, it is well known in the art the examiner takes an official notice that the rectifier diode is a semiconductor diode.

Art Unit: 2746

Regarding claim 8, Busking further discloses a matched pair of semiconductor diodes, a first diode located in the detector(D2) and a second diode located in the temperature compensation circuit(D3), and the current source flow current between the diodes (see fig.2).

Regarding claims 7 and 9, Busking further discloses the temperature compensation circuit includes a current source for a constant current between the temperature compensation circuit and the detector, a magnitude of the current being independent of temperature (col.1 line 19-32).

Regarding claim 10, Busking discloses a temperature compensated detector(28) including a directional coupler(22) having an input port(20), an output port(24). Busking fails to further disclose explicitly a forward sample port and a reverse sample port. However, Pakonen discloses a forward sample port and reverse sample port (see fig.1). Then it would have been obvious to anyone of ordinary skill in the art at the time of invention was made to modify Busking in having directional coupler two conductor and four ports, as per the teaching of Pakonen, in order to the detector circuit can lengthen the operating cycle time or allow a smaller battery to be used to obtain the same operating cycle time. Busking disclose a detector circuit(28) including a rectifier(D2), the detector circuit coupled to the forward sampler port(#26 fig.2); a temperature compensation circuit (D3,C4 and C5) coupled to the reverse sample port, the temperature compensation circuit providing a compensating bias to the detector circuit via said reverse sample port(see fig.2). Busking fails disclose the forward sample port connect to the detector and reverse sample port connected to temperature compensation circuit. However, Pakonen discloses forward

Art Unit: 2746

sampler port coupled to detector (16) and capacitor(18) and reverse sample port coupled to bias circuit (24) (see fig. 2). Then it would have been obvious to anyone of ordinary skill in the art at the time invention was made to modify Busking in having a design coupling the detector and temperature compensation circuit, as per the teaching of Pakonen, in order to provide a directional detector circuit for a power control or adjustment system where the coupling can be adjusted in accordance with the output powers.

Regarding claim 11, Busking discloses the detector circuit and the temperature compensation circuit each include a semiconductor diode of a matched diode pair, and each of the diode carries substantially the same magnitude of DC bias current, and the magnitude of the bias current is independent of temperature (col.3 line 7-10 line 24-26 line 46-48).

Regarding claim 12, Busking discloses the temperature compensated detector further including a wireless transceiver, and is coupled between an amplifier(18) and a load (R1)for controlling a power transmitted by said amplifier to the load(see fig.1).

Regarding claim 13, Busking discloses a method providing temperature compensation to a detector(28), including the steps of : coupling RF power (20) to a directional coupler(22) and there form to a load (24) (see fig.1); rectifying a signal provided at a forward sample port(26) of the directional coupler to provide a DC voltage representative of the RF power (col.2 line 1-8) ; and generating a DC bias signal that is independent of a rectifier temperature and coupling the DC bias signal to the forward sample port of the directional coupler, vial a reverse sample port(col.2 44-52). Busking fails explicitly to disclose the forward and reverse sample port. However,

Art Unit: 2746

Pakonen discloses the coupling of directional coupler to the detector diode (16) and capacitor (18) to teach forward port and temperature sensor diode (24) coupled to the directional coupler as reverse port to the biasing circuit(see fig.1). However, it would have been obvious to anyone of ordinary skill in the art at time of invention to modify Busking in connecting the coupler by forward and reverse ports the detector and biasing circuit, as per the teaching Pakonennnen, in order to compensate the current drain of the transmitter is increased to overcome the loss of power at high power levels, thereby reducing the transmitter's efficiency.

Regarding claims 14 and 15, Busking discloses providing a matched pair of rectifier diodes (col. 3 line 7-10 and line 47-48) , one rectifier diode(D2) coupled to the reverse port and another rectifier diode (d3) coupled to the reverse sample port and AC signals at the reverse sampler port to a common circuit node(see fig.2).

Regarding claim 16, Busking discloses a temperature compensated detector(50) a filter and an output providing a voltage corresponding to a signal carried between the input port and the output port of said directional coupler (#36 fig.1) and a temperature compensation circuit coupled to the reverse sample port, the temperature compensation circuit including a current source and a second semiconductor diode, the current source being configured to source substantially the same amount of current between the first and second semiconductor diodes as the temperature changes(see fig 2).

Art Unit: 2746

Regarding claim 17, Busking discloses the first and second semiconductor diodes have matched electrical characteristics (col.3 line 7-10 and line 47-47).

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Busking in view of Pakonen and Strakovsky (US PAT.5,392,464 hereinafter Strakovsky).

Regarding claim 4, Busking fails to disclose the different terminal comprises a reverse sample port that is AC terminated to a reference impedance. However, Strakovsky discloses the directional coupler port (L) connected to impedance inverter (30) a reverse sample port that AC terminated to a reference impedance (see fig. 2 and it's description). Therefore, it would have been obvious to anyone of ordinary skill in the art at the time of invention was made to modify Busking by changing the mixer design, in a reverse sample port that ac terminated to a reference impedance , as per the teaching of Strakovsky, in order to a well turned output signal and controlled signal.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Iida (US PAT. 5,732,332) discloses a temperature compensated detector includes a series circuit formed by successively connecting a first resistor, a first diode, a second diode having a characteristic substantially equal to that of the first diode, and s second resister , a third resistor , and fourth resistor.

Serial Number: 08889,318

Page 9

Art Unit: 2746

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tilahun Gesesse whose telephone number is (703) 308-5873. The examiner can normally be reached on Monday to Friday from 8:00AM to 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin, can be reached on (703) 305-4366. The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 305-9508.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Tilahun Gesesse
7-17-98


EDWARD F. URBAN
PRIMARY EXAMINER